

AMENDMENT TO CLAIMS

Claims 1-25. (Cancelled)

Claim 26. (New) An isolated protein comprising the 55 kDa extracellular protein of *Photobacterium damsela* subsp. *piscicida*.

Claim 27. (New) The isolated protein of Claim 26 wherein said protein has the amino acid sequence of SEQ ID NO: 2.

Claim 28. (New) The isolated protein of Claim 26 wherein said protein has the amino acid sequence from amino acid number 17 through amino acid number 513 of SEQ ID NO: 2.

Claim 29. (New) An immunogenic composition comprising the protein of Claim 26 and a pharmaceutically acceptable carrier.

Claim 30. (New) An isolated protein comprising an immunogenic derivative of the 55 kDa extracellular protein of *Photobacterium damsela* subsp. *piscicida*.

Claim 31. (New) An immunogenic composition comprising the protein of Claim 30 and a pharmaceutically acceptable carrier.

Claim 32. (New) An isolated polynucleotide comprising a DNA encoding the protein of Claim 26.

Claim 33. (New) A plasmid comprising the polynucleotide of Claim 32.

Claim 34. (New) The plasmid of Claim 33 wherein said plasmid is an expression vector.

Claim 35. (New) A host cell comprising the plasmid of Claim 33.

Claim 36. (New) An immunogenic composition comprising the expression vector of Claim 34 and a pharmaceutically acceptable carrier.

Claim 37. (New) An isolated polynucleotide comprising the DNA sequence of SEQ ID NO: 1.

Claim 38. (New) A plasmid comprising the polynucleotide of Claim 37.

Claim 39. (New) The plasmid of Claim 38 wherein said plasmid is an expression vector.

Claim 40. (New) A host cell comprising the plasmid of Claim 38.

Claim 41. (New) An immunogenic composition comprising the expression vector of Claim 39 and a pharmaceutically acceptable carrier.

Claim 42. (New) An isolated polynucleotide comprising a DNA sequence that is at least 70% homologous to the DNA sequence of SEQ ID NO:1 whereby said polynucleotide encodes a polypeptide that binds to an antibody that binds to a protein having the amino acid sequence of SEQ ID NO: 2 from amino acid number 17 through amino acid number 513.

Claim 43. (New) A plasmid comprising the polynucleotide of Claim 42.

Claim 44. (New) The plasmid of Claim 43 wherein said plasmid is an expression vector.

Claim 45. (New) A host cell comprising the plasmid of Claim 43.

Claim 46. (New) An immunogenic composition comprising the expression vector of Claim 44 and a pharmaceutically acceptable carrier.

Claim 47. (New) A method for preventing or treating pasteurellosis in a fish in need of treatment thereof comprising administering to said fish the immunogenic composition of Claim 29.

Claim 48. (New) A method for preventing or treating pasteurellosis in a fish in need of treatment thereof comprising administering to said fish the immunogenic composition of Claim 31.

Claim 49. (New) A method for preventing or treating pasteurellosis in a fish in need of treatment thereof comprising administering to said fish the immunogenic composition of Claim 36.

Claim 50. (New) A method for preventing or treating pasteurellosis in a fish in need of treatment thereof comprising administering to said fish the immunogenic composition of Claim 41.

Claim 51. (New) A method for preventing or treating pasteurellosis in a fish in need of treatment thereof comprising administering to said fish the immunogenic composition of Claim 46.

Claim 52. (New) A monoclonal antibody that binds to the protein of Claim 26.

Claim 53. (New) A method of preparing a vaccine against pasteurellosis, comprising the steps:

- (a) growing *Photobacterium damsela* subsp. *piscicida* cells in culture;
- (b) separating supernatant from the cells;
- (c) optionally, concentrating the supernatant; and
- (d) inactivating the supernatant with an inactivating agent.

Claim 54. (New) A method according to Claim 53 wherein in step (a) the cells are grown until mid-exponential phase, at which point step (b) is carried out.

Claim 55. (New) A method according to Claim 53 wherein said inactivating agent is formaldehyde.

Claim 56. (New) A vaccine composition comprising a preparation rich in p55 from *Ph. damsela* subsp. *piscicida* wherein said preparation is selected from the group consisting of an inactivated cell culture supernatant of said *Ph. damsela* subsp. *piscicida* and extracellular proteins of *Ph. damsela* subsp. *piscicida*.

Claim 57. (New) The vaccine composition of Claim 56 wherein said preparation rich in p55 is the sole immunogenic component of the vaccine composition.

Claim 58. (New) The vaccine composition of Claim 56 wherein said *Ph. damsela* subsp. *piscicida* cells have been cultured without iron supplementation and in the absence of iron chelating agents.

Claim 59. (New) The vaccine composition of Claim 58 wherein said *Ph. damsela* subsp. *piscicida* cells have been cultured in medium containing less than 15 μ M iron.

Claim 60. (New) The vaccine composition of Claim 56, wherein said cell culture supernatant is prepared from cell cultures grown to mid-exponential phase.

Claim 61. (New) A diagnostic kit for the diagnosis of *Photobacterium damsela* subsp. *piscicida* infection in fish comprising a reagent specific for *Photobacterium damsela* subsp. *piscicida* wherein said reagent is selected from the group consisting of an isolated polynucleotide of SEQ ID NO: 1, an isolated polypeptide of SEQ ID NO: 2, an isolated polypeptide of amino acids 17 through 513 of SEQ ID NO: 2; and a monoclonal antibody that binds to a protein comprising the amino acid sequence of SEQ ID NO: 2.